

Question 1: Is it possible to change the total work done to move an object? Why or why not?

- Yes, change of friction
- Yes, use simple machine
- No, change how much work you do
- Yes, change force or displacement
- Yes, with a lever

Answer: No, total work will be the same. F and d change, but W_{net} is same.

Q 2: What is the point of a machine, specifically simple machines?

- To make things easier
- Lessens force to do the same amt. of work
- Change amt. of energy required to do work
- Decrease F , increase d
- makes things easier

Q3: What are the simple machines?

Inclined plane

Pulley

Lever

wheel/axle

Wedge

Screw

- Def. of machine:
Something that helps you do work
- We're going to study four:
levers, inclined plane, wheel/axle, pulley

Levers:

- Fulcrum

- Board



From Activity:

1. As d_e increased, F_e should have decreased.
2. Inverse relationship bet. d_e and F_e

$$W = \bar{F}d$$

$$\bar{F} = \frac{W}{d} \text{ (Work constant)}$$

4. Should have been similar

5. Should have increased

Mechanical Advantage (MA):

- Ideal MA (IMA)

- MA in an ideal world

- To calculate:

$$IMA = \frac{d_e}{d_r}$$

(you on machine)
effort distance
resistance distance
(machine on obj.)

- Actual MA (AMA):

- MA in real world

- To calculate

$$AMA = \frac{F_r}{F_e}$$

(machine's F on obj.)
resistive force
effort force
(your F on machine)